ABSTRACT OF THE DISCLOSURE

An apparatus for generating ozone in high concentration with efficiency and linearly controlling the concentration of ozone is disclosed. The apparatus includes an oxygen generator, a flat plate type ozone generator, a high-voltage transformer, a high-frequency inverter, a cooling-water supplier, and a control signal generator. The high-frequency inverter linearly controls the concentration of ozone by applying a high-frequency voltage pulse generated according to a predetermined ON/OFF time ratio corresponding to a voltage level of a control signal, to the flat plate type ozone generator through the high-voltage transformer. The flat plate type ozone generator uses a flat plate type ceramic as dielectrics, thereby optimizing the efficiency of ozone generation and the endurance of the ozone generator, and thus simultaneously miniaturizing dimension thereof.